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published in
Advances in Accounting
2019

DOI (link to publisher)
10.1016/j.adiac.2018.11.001

document version
Publisher's PDF, also known as Version of record

Advances in Accounting 44 (2019) 3–9

Contents lists available at ScienceDirect

Advances in Accounting

journal homepage: www.elsevier.com/locate/adiac

Leases on balance, a level playing field?

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ARTICLE INFO

Keywords:
Capital structure
Investment decision
On-Balance Operating Leases
IFRS 16
Experiment

Abstract: Due to changes in lease agreements accounting standards, firms will soon have to recognize operating lease obligations that historically have been kept off-balance sheets (OBS). Research indicates that this change will have substantial effects on the presentation of the financial position and results of firms involved. It is also expected that this will affect decision-making by stakeholders such as boards, managers, bankers and financial analysts. Although it is assumed that these professionals consider all relevant information, it is also known that the smaller the chance of relevant information being overlooked, the better the decision-making. In this study we examine whether IFRS 16 has that positive effect. The results from this research suggest that the accounting treatment under IFRS 16 contributes to the quality but not necessarily to the ease of making investment financing decisions.

1. Introduction

In business, leasing is an important alternative financing instrument to loans. Instead of applying for a general loan or credit facility, an investor can become the owner of the asset and finance the investment with a loan to be paid back over an agreed period of time (financial lease) or, as a non-owner, can pay rent over an agreed period of time (operational lease). The latter form of leasing became very popular between 1980 and 2007, whereas on-balance sheet leases fell by 50% in the same time period (Cornaggia, Franzen, & Simin, 2013). According to reporting standards (IAS 17),[1] financial lease contracts must be capitalized on the balance sheet. Operational lease contracts, on the other hand, could be capitalized or presented off-balance sheet. According to Hsieh and Su (2015), this flexibility resulted in a lack of comparability in lease reporting and provided easy access to off-balance sheet financing for many companies. Several researchers have investigated whether market participants recognize disclosed lease information about financial lease liabilities (Wilkins & Zimmer, 1983) and operating lease liabilities (Bratten, Choudhary, & Schipper, 2013; Dhaliwal, Lee, & Neamtiu, 2011 and Ely, 1995). They all found that lease liabilities were considered when judging equity risk, cost of debt and implied cost of capital and bond ratings. According to Hsieh and Su (2015), however, there is also an impact on earnings, i.e. the manner in which operating leasing liabilities are accounted for influences how this information is used in cash flow prediction and return-earnings models. They conclude that determining lease expenses based on capital leases is more economical for market participants. Although research (Graham & King, 2013) indicates that some leased assets should be capitalized at the assets' purchase price (whole asset value), current practice is that leased assets are capitalized at the present value of future minimum lease payments (right-of-use asset value).

From January 1, 2019, companies will be compelled to comply with the introduction of IFRS 16 to capitalize their operating lease liabilities. This change may play an important role in the quality of investment financing decision-making based on that information. The International Accounting Standards Board (IASB) is fully convinced of the importance of this role, as evidenced by their decision to adapt the prevailing International Financial Reporting Standards. Hans Hoogervorst, IASB-chairman, explains the new requirements:

"These new accounting requirements bring lease accounting into the 21st century, ending the guesswork involved when calculating a company's often-substantial lease obligations. The new standard will provide much-needed transparency on companies' lease assets and liabilities, meaning that off-balance sheet lease financing will no longer be lurking in the shadows. It will also improve comparability between companies that lease and those that borrow to buy."

According to earlier research by Cornaggia et al. (2013), Singh (2012) and Wicker and Young (2011), it can be expected that the change in rules will influence the evaluation of financial ratios of leasing firms. Similarly, Hales, Venkataraman, and Wilks (2012) argue

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[1] For information regarding international accounting rules and additional information on leasing, please refer to the IFRS and IASB website http://www.ifrs.org/Current-Projects/IASB-Projects/Leases/Pages/Leases.aspx

https://doi.org/10.1016/j.adiac.2018.11.001
Received 10 May 2018; Received in revised form 7 November 2018; Accepted 11 November 2018
Available online 23 November 2018
0882-6110/

that the new rules could make it more difficult for some firms to raise capital unless they disclose the minimum obligation period and the renewal period separately. Gross, Huston, and Huston (2014) argue that the proposed rule changes will affect debt covenants, compensation contracts and EBITDA calculations. Furthermore, a complete revision of historical figures and ratios is needed to ensure the availability of comparative figures.[2]

Existing recent research focuses mainly on financial statement analysis and market data. Because the source data is comprised of a culmination of multiple influences, it is not clear whether the change to reporting rules will indeed influence the quality and ease of financial decision-making. Wilkins and Zimmer (1983) have already investigated whether a different presentation of financial lease obligations would affect the behavior of financial analysts in projecting earnings and share valuation.

As they acknowledge several limitations they suggest replication of their study using other subjects, case material and alternative research methods. The purpose of this research is to elaborate on their research, taking some of the limitations into account. We would like to clarify whether the new situation, i.e. “all leases on-balance”, will lead to a positive change in the quality of investment decision-making by professional users of financial information like lenders, creditors, financiers, business analysts, etc.

In section II the literature is reviewed and the conceptual framework and research model developed. This section culminates in the proposal of the hypotheses. In section III the research method, the development of the case study and the procedures used in the experiment are detailed. In section IV the results of the hypotheses tests and evidence of underlying theory are discussed. Based on the results, conclusions are presented in section V.

2. Literature review and development of hypotheses

2.1. Literature review

Both the provision of information for decision-facilitating purposes and the characteristics of that information have been found to improve individuals' knowledge and ability to make better judgments and decisions (Sprinkle, 2003) and lead to less or more consensus among professionals (Wilkins & Zimmer, 1983). According to Luft and Shields (2003), this can be moderated by several individual, task and environmental factors. One of Luft and Shields' (2003) suggestions for further research is to study the decision-facilitating role of managerial accounting information in controlled laboratory settings. These settings would also allow for the consideration of evidence from prior research, i.e. that more aspects are relevant in decision-making. An example of possible further research of this nature is the study of the impact of changes to information (and its characteristics) about operating leases (due to the change in accounting treatment of operating leases) on the investment decision-making process.

The relationship between leases and debt, both of which are important instruments in the financing toolkit available to corporations, is receiving increasing attention from researchers in the study of the corporate financing discipline. Modigliani-Miller's framework, which assumes the irrelevance of the financial structure, perfectly competitive capital markets, no transaction costs or information asymmetry, formed the basis for early research focusing on the tax aspects of leasing.

There is various evidence regarding the relationship between leases and debt, termed a “leasing puzzle” by Ang and Peterson (1984). Until 1998, most researches focused on capitalized leases and generally ignored operating leases. Thereafter, however, Graham, Lemmon, and Schallheim (1998) and Beattie, Goodacre, and Thomson (2000) focused on determining the number and relative importance of operating leases, resulting in the adoption of the constructive capitalization method (Imhoff, Lipe, & Wright, 1991) to include operating leases in their research.

More recently, Yan (2006) and Rampini and Viswanathan (2013) disregarded capitalized leases in their research approaches and focused purely on operating leases and their relationship with capital structure. Rampini and Viswanathan (2013) indicate that “in our view, this evidence provides a strong case, that leased capital cannot be ignored if one wants to understand the capital structure”. Findings from Lin, Wang, Chou, and Chueh (2013) also support the theory that leases provide additional financing capacity, especially when firms experience financial constraints.

The constructive capitalization method referred to above is one way of determining the operating lease obligations, based on information supplementary to the balance sheet, and thus improving insight in a company's capital structure. However, it should be noted that other approaches exist. Furthermore, this method requires the individual analyst to make assumptions about duration, appropriate discount rates, and so on to determine the lease obligations' present value, which makes the decision more complex.

Despite evidence indicating that off-balance sheet leases influence lenders' use of accounting information (Wilkins & Zimmer, 1983), research by Paik, van der Laan Smith, Lee, and Yoon (2015) suggests that the proposed change will make the balance sheet a more complete source of information for debt contracting by removing the need for the constructive capitalization method.

Spencer and Webb (2015) reviewed existing studies to understand why firms engage in operating leases and how information about these arrangements impacts users. They found that lenders, credit rating agencies and other market participants generally have an adequate understanding of off-balance sheet leases and consider them in their decision-making. On the other hand, Durocher and Fortin's (2009) findings reveal that bankers give significantly more consideration to information regarding capital leases than to information regarding operating leases when analysing loan requests. Their research reveals the bankers' beliefs that the capitalization of operating leases will improve their ability to evaluate lessees' long-term commitments and increase their estimates of the risks involved in providing financing to lessees.

2.2. Development of hypotheses

Findings from previous research suggest that the introduction of IFRS 16 could address issues of both the quality and the ease of decision-making by obligating firms to capitalize operational lease commitments. We focus on the effect on the behavior of financial specialists in deciding on an investment opportunity and propose the following hypotheses.

H1. Presenting financial information regarding operational lease commitments in accordance with IFRS 16 will improve the quality of an investment financing decision and increases consensus among specialists in comparison with an off-balance sheet presentation.

H2. Presenting financial information regarding operational lease commitments in accordance with IFRS 16 will have a positive influence on the ease of making an investment financing decision in comparison with an off-balance sheet presentation.

3. Method

3.1. Experimental design and overview

The purpose of our research is to study whether a change in an independent variable (the presentation of leases in accordance with the

[2] See for example www.nvl-lease.nl/sites/default/sites/IFRS16geengoedplanDEFversiejan12012016.pdf

new accounting standard) causes a change in a dependent variable (the investment decision). McGrath (1981) and Birnberg, Shields, and Young (1990) suggest that a laboratory experiment is the most appropriate empirical research method for addressing questions of this type. This is due to its high internal and statistical conclusion validity, its potentially high construct validity and its high level of control. It is important to note that the external validity of experiments refers to the existence of the tested theoretical relationship in the experiment (Libby, Bloomfield, & Nelson, 2002; Webster & Sell, 2007).

Libby et al. (2002), however, suggest a more direct test that would give all participants the same information (e.g. a complete financial statement) and vary the ease with which the information can be analysed (as in Dietrich, Kachelmeier, Kleinmuntz, & Linsmeier, 2001). In this research, we chose to focus on varying the ease with which the information can be analysed rather than on varying the participants' knowledge and training (reflected in the participant selection). This is congruent with McGrath's concern about the research scope. We chose specifically to "learn a lot about little" and use a limited scope. This has important implications for the case study development, i.e. in reducing possible noise and addressing moderating and confounding variables not included in the model. In contrast to the experiment of Wilkins and Zimmer (1983), who have chosen to use two hypothetical companies which differed in their respective leverage levels as well as in the presentation of lease information, we decided to use a single company with only presentation of lease information as the single difference. We also decided to organize the experiment at a specific place and time, instead of asking participants to complete the task at the place of work. We believe that our design leads to a more equal setting for all participants

Testing threat was addressed by making this experiment part of the EMFC Program conference day, highlighting the importance of the participants' professional input. Common threats to validity, like history, mortality, maturation and ambiguity of causal direction, do not apply due to the chosen design. The cross-sectional research approach limits the threats to internal validity to selection bias. This threat was addressed by randomization.

To determine the preferred design, we had to choose between the random assignment of the treatment (as opposed to an experimental and control group) or a matched pairs approach. We chose to adopt the random assignment method. The research design is a post-test only between-subjects control group design (Libby, 1981).

Control variables used for analyses are age, gender and number of years working experience (as a controller). Information about occupation and industry sector was also gathered. Furthermore, we investigated the difficulty experienced in solving the case, the perceived authenticity of the case and the time used to solve the case. The latter is assumed to be a good indicator of the ease with which the task is executed.

3.1.1. Choice of case study

In the case study used (Appendix 1) participants were given the role of financial adviser to the CFO of a dredging company, where a prepared business case requires financing in the form of an operating lease agreement. Participants were asked to decide whether or not they would support the business case with respect to the impact on the company financing conditions based on the case information, and advise the CFO. They were asked to use the responses 'yes', 'no' or 'don't know' to answer whether they would advise the CFO to support the proposal. In addition they were asked to explain and motivate their answers and elaborate on elements of information used to come to their decision as well as elements of information they felt were missing, if any, to come to the right decision.

Two versions of the case study were used (Company Ap Rio Ri and Company Apos Teriori). The first version dealt only with assets in financial leases being capitalized and the second with all leased assets capitalized and all obligations on-balance sheet (based on IFRS 16). In the first case, supplementary information about off-balance sheet operational leases was made available (consistent with current accounting rules, IAS 17).

3.1.2. The information elements included in the case study

The case study provides the basic relevant information needed to analyse and solve the question regarding an investment proposal. Additional data is also presented. This data deals with factors like net present value of future cash flows related to the investment, at a discount rate based on the weighted average cost of capital adjusted for risks involved, and the duration of the contracts.

The only discriminating aspect of the two case study versions is the presentation of the operating lease obligations. To emphasize the importance of the operating leases obligations, a strict rule imposed by the supervisory board with respect to the D/E ratio was included: "Strict instructions from the supervisory board still apply with respect to the 'debt-to-equity' ratio, which at all times has to remain below 3, all relevant information taken into account". The inclusion of this additional clause was meant to stipulate that, whether or not operating leases were accounted for on the balance sheet, they should be considered when judging the D/E ratio.

3.2. Participants

Congruent with the experiment conducted by Wilkins and Zimmer (1983) and Elliott, Jackson, Peecher, and White (2013), a total of 46 Executive Master of Finance and Control (EMFC) students participated and acted as a proxy for reasonably informed investors. All the students hold a Master's degree and have completed the theoretical aspect of the programme, including advanced financial and management accounting, advanced corporate finance and investment decision-making courses, and all are active in a controller-related role.[3] The participant selection method can be considered a combination of judgemental and convenience sampling (Saunders, Lewis, & Thornhill, 2016, p301–304).

The characteristics of the participants in the experimental and the control groups are presented in Table 1.

As reflected in Table 1, the participants in group A, the control group, are approximately two years older, have a little over two years additional working experience and almost one year more experience than the experimental group participants.

The random assignment of treatment resulted in an equal spread of participants across the two groups (presented either with case A or B) in terms of number (both 23) as well as gender.

In order to analyse whether the differences shown in Table 1 are significant, the groups were compared using Levene's test and ANOVA. The results of these tests indicate no significant difference between the two groups according to age, number of years control experience or number of years working experience, at a 95% confidence level.

To examine the potential influence of gender, another ANOVA was performed. For this purpose, groups A and B were further split into two groups according to gender. The four groups resulting from this split were tested. The test results indicate no significant difference between the four groups in terms of age, number of years control experience or number of years working experience, at a 95% confidence level.

3.3. Experimental procedures and dependent variables

As the EMFC program is part of the Executive Education section of the School of Business and Economics of the Vrije Universiteit, program management is motivated to support the execution of practical research in Finance and Control. As this research fits the research interests of program management, the authors got full support for executing this study.

[3] Participant information can be obtained from the researcher.

Table 1
Characteristics of the experimental (B) and control (A) groups.

Aspects	N	Mean	Std. deviation	Std. error mean
Age A	22	33.86	7.492	1.597
B	23	31.83	4.706	0.981
Gender A	18(M) 5 (F)			
B	18(M) 5(F)			
# yrs work exp. A	22	10.27	7.192	1.533
B	23	8.13	4.893	1.020
# yrs control exp. A	22	4.68	3.564	0.760
B	23	3.74	2.649	0.552

Participants were taken to one room where 50 case study copies (25 of each version) and a white envelope containing the Post Experiment Questionnaire(PEQ) were presented on the tables. Participants were free to select a table and were asked to please be silent during the experiment and not to consult each other. They were allowed to use their mobile phones as calculators.

They were also told that the white envelope they found at their table accompanying the case study contained a PEQ. They were instructed to write their names on the case study form and mark the starting time. They were then asked to solve the case study, fill out the attached reply form and mark the ending time, and to raise their hands upon completion. Participants were informed that the case study would be collected at their tables, and that after submitting the case study with the attached reply form, they should open the envelope containing the PEQ and fill out the questionnaire. It was made clear that after submitting the PEQ, they could silently leave the room. After these instructions were conveyed, no contact between participants was allowed.

3.4. Pilot study and expected results of the experiment

We expected that no more than 30 min would be needed to introduce and execute the task, based on a small quasi pre-test on colleagues. These colleagues had the same background as the participants in terms of ability, knowledge and motivation, and were able to receive the introduction and form an opinion regarding the primary question asked in the case within the aforementioned timeframe. Their answers were not recorded, nor were they asked whether they lacked important information.

There was no contact between these colleagues and the participants in anticipation of the experiment, nor did they participate in the experiment.

3.4.1. Expected results

Consistent with corporate financing and investment decision-making theory discussed in section II, we expected the following solutions to be proposed for the case studies. The participants should consider the full extent of operating leases obligations, regardless of the accounting rules applied (disclosed in additional information to the balance sheet or on balance). As debt and leases are regarded as being substitutes, the proposed contract would result in a debt-to-equity ratio above 3, which is unacceptable according to strict supervisory board instruction. Advice to reject the proposal would therefore be the expected outcome. Based on the suggestion by Libby et al. (2002), however, the difference in presentation, leading to information that is more difficult to analyse, may cause a divergence in outcome and less consensus among participants in the control group.

Based on theory, and consistent with the hypothesis developed, participants of the control group are expected to

1) submit significantly fewer correct answers than the experimental group;
2) spend significantly more time to execute the task.

Table 2
Answers to the case study given by the participants of the experimental (B) and control (A) groups.

	Advice given			Total
	Don't know (DN)	(N)o	(Y)es	
Case A	9	7	7	23
B	10	12	1	23
Total	19	19	8	46

4. Results

4.1. Testing the hypotheses

4.1.1. Hypothesis 1

Testing hypothesis 1 the following analyses were performed.

Table 2 presents the answers given by participants in solving the case study.

The results of the Pearson Chi-Square Test and Fisher Exact Test indicate the differences between the control and the experimental group to be significant at a 90% confidence level.

The most cited motivation (18 citations) for participants' decision-making was the strict instruction regarding the debt-to-equity ratio, and the strict instructions regulating it. Two participants were not comfortable enough with their knowledge of IFRS 16 to make a decision; one indicated that he/she deliberately did not consider the proposed IFRS changes in order to give positive advice.

As stated in (a) above, the expected counts of the Chi-Square Test should be at least 5; otherwise the test results are less accurate. The outcome of the alternative test, the Fisher's Exact Test, also presented in Table 3, confirms the reported significant difference.

The above-calculated test assumes that equal values are expected between groups. However, one could argue that, based on the suggestion by Libby et al. (2002), among others, referred to in a previous section, the outcome of the counts of the experimental group would be expected to be the same as the control group if the accounting change did not have an effect on decision-making.

Therefore, a Chi-Square Test was performed with expected counts for group B being equal to those of group A. The observed counts of group B were then tested against the observed counts of group A as being expected results. This led to the results presented in Table 4.

The Chi-Square Test statistics in Table 5 reveal a significant difference in answers between groups at a 95% confidence level.

As previously indicated, the two groups are considered equal in all aspects relating to their composition. This leads to the conclusion that the discriminating aspect between the cases, namely the accounting change, is the sole cause of the difference in the answers to the cases.

An almost equal number of participants per group answered “Do not know” (DN). Additional information reveals that the most common and significant argument for their answer is “lack of information”. In Table 6 most mentioned information items that participants are missing are listed.

In the control group several participants felt insecure because of the

Table 3
Test results of Pearson Chi-Square Tests and Fisher's Exact Test.

	Value	Df	Asymp.Sig.(2-sided)	Exact Sig. (2-siden)
Pearson Chi-Square	5.868 (a)	2	0.053	0.058
Likelihood Ratio	6.446	2	0.04	0.058
Fisher's Exact Test	5.754			0.058
N of Valid Cases	46			

Two cells (33.3%) have expected count less than 5. The minimum expected count is 4.00.

Table 4
Test results of Chi-Square Test with expected counts based on the observed counts of the control group.

Advice given	Observed	Expected N	Residual
Don't know	10	9	1
Yes	1	7	−6
No	12	7	5
Total	23	23	

Table 5
Chi-Square Test statistics.

	Value	Df	Asymp.Sig.(2-sided)	Exact Sig. (2-sided)	Point probability
Pearson Chi-Square	8.825 (a)	2	0.012	0.012	0.001

0 cells (0%) have expected frequencies less than 5. The minimum expected cell frequency is 7.0.

Table 6
Missing information items.

Missing information items	Experimental group A	Control group B
More details of the business case	14	10
More information on the forecast of project earnings, cash flow and profits	7	7

effect of IFRS 16 (4) and in the experimental group several participants felt insecure about the way the operational lease obligations should be capitalized.

A plausible explanation for the fact that participants (in total 24 of the entire population) state that they miss information, could be that, given the advisory task, participants assumed they should not only be critical on compliancy rules, such as the D/E ratio restriction, but also should audit or review the work already done by other specialists and departments before approving or disapproving the investment proposal. Only one participant of the control group answered “all information was already checked by specialists of several departments, including finance, so why bother?”

To check the reliability of the results, another analysis was performed. Sprinkle (2003) indicates that knowledge, ability and experience may affect how well managers and others within the firm use management accounting information. Whereas the level of participant knowledge regarding the case study in this research is addressed by selection based on prior education, their experience and related ability may vary. Participants were therefore divided into two groups, one with a below average working experience and the other with a higher than average working experience. Results are shown in Table 7.

Although the number of counts is too small to perform a Chi-Square test, the results of the additional analysis clarifies that in both groups (i.e. both less and greater than average working experience) the answers to case study A are almost equally divided (50%/50%) between “Yes” and “No”, whereas the answers to case study B are 11%/89% and 0%/100% respectively, taking the participants not answering “Don't Know” into account. It is also clear that there is no distinction in the group of participants who answer “Don't Know” between participants with greater or less than average working experience. This is consistent with the results of the control and experimental groups not being split based on average working experience.

Table 7
Data participants divided based on below or above average working experience.

Case answers Working experience			DN	Y	N	Total
Below average	Case	A	4	3	4	11
		B	6	1	8	15
	Total		10	4	12	26
Above average	Case	A	5	3	3	11
		B	4	0	4	8
	Total		9	3	7	19
Total	Case	A	9	6	7	22
		B	19	1	12	23
	Total		19	7	19	45

Sprinkle (2003) indicates that a number of individual, task and environmental factors (see also Luft & Shields, 2003) can moderate the efficacy of information in improving judgement and decision performance. The experimental design and randomization are expected to have addressed these aspects in this research. Sprinkle (2003) also argues that the characteristics of information (in this case on-balance operational leases information rather than supplementary information) have been found to improve individuals' knowledge and ability to make better judgements and decisions. This is supported by the evidence presented in this research.

Based on these analyses, hypothesis I is accepted. Changing the rules of accounting for operating leases (IFRS 16) will have a significant positive influence on the quality of an investment financing decision and consensus among decision makers.

4.1.2. Hypothesis II

Testing hypothesis II the following analyses were performed.

In Table 8 information is presented of the time used by participants to complete the task.

The time used to solve the case study differs by almost a minute, as participants of the control group required more time to solve the case study.

These results indicate there is no significant difference between the two groups with respect to time used to solve the case study, on a 95% confidence level.

With respect to the ease of execution of the task other aspects are to be considered. Participants were asked about the difficulty they experienced in solving the case study and their perceived authenticity of the case study. These variables were measured on a five-point ordinal scale.(see Table 10)

To gain insight into these aspects, an independent samples median test was performed, the results of which are shown in Table 11.

Results suggest that the level of difficulty of the case study as well as the perceived authenticity of the case study is the same in both groups. Participants of both groups appreciated the average difficulty and authenticity of the case. Both these variables cannot be used to explain the difference in time used by participants.

Based on the analysis of time spent on the case study (Table 9), no significant difference was found between groups A and B. Hypothesis II is therefore not accepted.

4.2. Additional analysis

Additionally, the groups that gave the same advice (Yes, No, Don't know) were tested based on potential relationships between their characteristics (age, years control experience, years work experience and time used). The results reveal no significant relationships between the three groups in terms of age, number of years control experience or

Table 8
Time used by participants.

Aspect		N	Mean	Std. deviation	Std. error mean
Time used	A	22	16.30	4.14	0.54
	B	23	15.26	5.00	1.02

Table 9
Results of the ANOVA test two groups: Case A Control group, Case B Experimental group.

ANOVA						
		Sum of squares	df	Mean Square	F	Sig.
Time used	Between Groups	45,932.174	1	45,932.174		
	Within Groups	3,344,947.826	43	77,789.484	0.590	0.446
	Total	3,390,880.000	44			

The test of Homogeneity of Variances on Time used, based on a Levene Statistic of 0.015 result in a Significance score of 0.903.

Table 10
Descriptive data on participants perceived difficulty and realism of the case study.

Case		Level of difficulty	Level of realism
A	Mean	3.05	3.09
	N	22	22
	Std. Deviation	1.046	0.971
B	Mean	2.87	2.96
	N	23	23
	Std. Deviation	1.014	1.147
Total	Mean	2.96	3.02
	N	45	45
	Std. Deviation	1.021	1.055

number of years working experience at a 95% confidence level.

The other qualitative data stemming from the experiment showed no indication that participants were aware of the purpose of the research prior to completing the case study and the post-experiment questionnaire. Analysing the answers to the question referring to the purpose of this experiment, only one participant answered: “assess the impact of IFRS 16 on investments decisions financed through operating leases”.

4.3. Discussion of the results

The results of this research suggests that the IFRS 16 lease accounting change will have a significant positive influence on the quality of investment financing decision-making and more consensus among professionals regarding the treatment of lease obligations.

This is consistent with evidence found by Wilkins and Zimmer (1983) and Durocher and Fortin (2009) which shows that the capitalization of operating leases improves bankers' ability to evaluate lessees' long-term commitments. Furthermore, our results are congruent with Gross et al. (2014) who indicate that changes in accounting standards change the way that key financial information is used by investors and lenders, impacting investment decisions.

Whereas Spencer and Webb (2015), based on their review of existing studies, report that capital market participants sufficiently understand off-balance sheet leases and consider them in their decision-making, our study suggests that although information about off-balance sheet leases may be considered in decision-making by finance professionals, the altered presentation as a result of the accounting change improves the ability of finance professionals to incorporate relevant information in their decision-making process.

A possible explanation is provided by Paik et al. (2015) who suggest that the accounting change that involves the capitalization of off-balance sheet leases removes the need for constructive capitalization and makes the balance sheet a more complete source of information. The latter is thus considered to be “easier to analyse” and therefore lays a foundation for higher quality investment finance decision-making, as suggested by Libby et al. (2002).

However, in this study, ease of analysis did not necessarily reduce the time needed to come to a conclusion. This could partly be explained by the specific task given to participants in this experiment.

5. Conclusions and recommendations

5.1. Conclusions

The purpose of this research was to clarify whether the new situation, i.e. “all leases on-balance”, actually has the expected impact on the quality of investment decision-making by professional financial information users like lenders, financers, business analysts, etc. The results indicate that the change in the quality of decision-making is affected by the change in accounting standards, supporting the hypothesis that on-balance accounting for operating leases leads to a significant difference in and higher quality outcome of the process of making investment financing decisions. This is consistent with theory suggested by Libby et al. (2002) and Sprinkle (2003) with respect to the analysability and characteristics of information, and these results support the decision by the IASB to make this change in accounting standards from IAS 17 to IFRS 16.

Initially, many business professionals experienced resistance to the announced change of accounting standards, due to potential consequences for companies and the opinion that all relevant information was already available, albeit off-balance sheet. Our research shows that if operating lease information is presented in accordance with international accounting standard IFRS 16, it has a significant positive influence on the quality of decision-making by the professional users (investors, analysts, etc.) and validates existing theory on this subject, as provided by Wilkins and Zimmer (1983), Durocher and Fortin (2009), Gross et al. (2014), Lin et al. (2013), Spencer and Webb (2015) and Paik et al. (2015).

5.2. Recommendations

One must also acknowledge, however, the large impact this change will have. Based on our evidence, the change in accounting standards is expected to influence the assessment of companies' capital structures/solvency, liquidity, ability to repay and credit rating by credit-rating agencies, business analysts, financers, etc., and will impact, for instance, the composition of bank covenants and contracts, key financial information and indicators.

This does not apply only to listed companies but also to non-listed companies. On the one hand, listed companies must initiate a well-organized project on short notice, if they have not already done so, to

Table 11
Results of the Independent Samples Median Test on participants perceived difficulty and realism of the case study.

Hypothesis test summary				
	Null Hypothesis	Test	Sig.	Decision
1	The medians of Level of difficulty are the same across categories of Case.	Independent-Samples Median Test	0.932	Retain the null hypothesis
2	The medians of Level of realism are the same across categories of Case.	Independent-Samples Median Test	0.908	Retain the null hypothesis

Asymptotic significances are displayed. The significance level is 0.05.

meet the requirements resulting from the obligation to comply with the aforementioned accounting standard from January 1, 2019. Non-listed companies, on the other hand, need to be aware of this change and can expect that these international accounting rules will filter through to local GAAP, presenting them with a similar challenge.

In addition, all companies should recognize the improved quality of decision-making resulting from applying the new standards. Whether they are obliged to comply with these standards or not, careful consideration should be given to the fact that fulfilling obligations resulting from operating leases on-balance sheet influences the quality of decision-making regarding investment financing proposals.

5.3. Limitations and suggestions for further research

To limit the scope of this research was a conscious choice, as referred to in the method section. Case information was thus rather compact and summarized. This was especially the case in terms of the information regarding the attractiveness of the investment, thereby pointing to the one discriminating aspect. Besides a significant distinction in the pro and con answers of the participants to the proposal based on this discriminating aspect, this also led to a number of participants (equal in both groups) who answered “do not know”. The main reason cited for not being able to make a decision was “lack of information”.

Even though participants are all highly educated professionals and the EMFC courses are precise in terms of the case study provided in this research, analysing these types of investment financing proposals is not part of their daily work. A future experiment involving professionals from credit rating agencies, business analysts, bankers, etc., who judge proposals like the one presented in this research on a daily basis, might further substantiate current findings.

As a result of the clarity of this experiment, future studies could benefit from the opportunity this evidence provides to extend the scope of research and “learn more about more”.

Besides the evidence this research has yielded regarding the impact of a change in accounting standards on the quality of investment decisions, it has also generated a wealth of qualitative information with respect to information considered important by the composers of the requested advice to the CFO. Additional experimental research could enhance insight, for instance by ranking the required, used or missed information aspects generated by, but out of scope for, this research, in order to further clarify arguments that are regarded decisive in the decision-making process.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.adiac.2018.11.001.

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